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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/887,888	06/22/2001	Thomas C. Fall	SJ-96055	8013

7590

11/04/2004

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EXAMINER

BAKER, STEPHEN M

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/887,888

**Applicant(s)**

FALL, THOMAS G.

**Examiner**

Stephen M. Baker

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-6 and 8 is/are allowed.
- 6) ☒ Claim(s) 7 and 10-17 is/are rejected.
- 7) ☒ Claim(s) 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 September 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities:

Regarding the description of Fig. 4, on page 16, in lines 18-19, "For instance, one thread is put into more than one register" is either not shown, or it is not made clear what a "thread" is. Applicant is requested to identify a "thread" in Fig. 4. The same drawing number, "11" is used to refer to two different elements. It is suggested that "11a" and "11b" be respectively used for the registers "11" at the transmitter and receiver.

Regarding the description of Fig. 4a, the figure apparently does not show a "device," but shows a data flow diagram, instead. The presence of register box representations for a data queueing process (11) does not turn a data flow diagram into a "device." On page 17, in line 7, "shown on the right," is apparently incorrect and apparently should be deleted. On page 17, in lines 12-13, "Fig. 4a shows the symbol  $D_6$  in the data register 11" is apparently incorrect and poorly worded, as there is no " $D_6$ " shown and there is more than one "data register 11." Numerous references to "the data register 11" on page 17, in lines 13, 15, 16, etc. are confusing as there is more than one "data register 11" shown. The paragraph on page 17, lines 16-22 apparently refers to Fig. 4 in a context where Fig. 4a apparently should be described. There is to "queue 14" or "stack 14" in Fig. 4a, nor is element "14" in Fig. 4 a "queue." In line 25 on page 17, "stacks 14" are not shown in Fig. 4a. The paragraph on page 17, lines 23-35

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apparently refers to Fig. 4 in a context where Fig. 4a apparently should be described. Figure 4 shows an error detection and correction computation 14, which could not be accomplished by "stacks". The "stacks" or "queues" appear to actually be the registers 11. In lines 25-26 on page 17, "two copies of  $D_6$  have been made, one pushed onto stack 2, and the other pushed onto stack n" is not shown in Fig. 4 or 4a. The paragraph spanning pages 17 and 18 again refers to "stacks 14" and symbol " $D_6$ ", none of which are shown in any drawings, and to a "unit 16" also not shown. The paragraph on page 18, in lines 8-16, refers to "stacks 14," a "unit 16," and an "ECC queue 18," none of which are shown in any of the drawings. The paragraphs on page 18, lines 17-36, refer to "stacks 14," an "ECC queue 18," and a "data queue 17," none of which are shown in any of the drawings.

Appropriate correction is required.

### ***Drawings***

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "11" has been used to designate both transmitter registers and receiver registers, and reference character "14" has been used to designate both an error detection and correction process and a queue (or queues or stacks). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be

labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to under 37 CFR 1.83(a) because they fail to show stacks or queues 14, a error correction computation unit 16, a data queue 17, or an ECC queue 18 as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 7 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 7 and 16, "samples are taken at fixed time intervals that are longer than the time intervals of error bursts caused by the noisy channel" is confusing, as there is nothing apparently preventing indefinitely long noise bursts, and as "samples taken at fixed time intervals" is presumable a reference to adjacent data symbols, which have no such separation prior to interleaving.

***Allowable Subject Matter***

6. Claims 1-6 and 8 are allowed.
7. Claim 7 would be allowable if rewritten to overcome the rejections under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.
8. Claims 11 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The indicated allowability of claims 10 and 12-17 is withdrawn in view of the newly discovered reference to Yonemitsu *et al.* Rejections based on the newly cited reference follow.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 10 and 12-17 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,793,779 to Yonemitsu *et al.* (hereafter “Yonemitsu”).

Yonemitsu discloses a recorder/player for a “compact disk” storage. On the recording side, Fig. 1 of Yonemitsu shows receiving an “incoming data stream” at an input terminal 121. Yonemitsu’s transfer of the input data through an EDC adding circuit 127 and a sector adding circuit 128 necessarily involves “copying each data symbol that is to be transmitted onto a register.” Yonemitsu’s storage of input data in a memory 131 is “placing each data symbol onto a transmit output buffer in a predetermined position, wherein positions between the data symbols are filled with error correcting symbols calculated after a register gets filled” (col. 18). Yonemitsu’s modulator 140 receives the “symbol transmission stream from the transmit output buffer.” On the playback side, Fig. 2 of Yonemitsu shows “receiving the transmitted transmission stream”, a ring buffer 217 contains “predetermined registers” into which received “data and error correction

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symbols from the symbol transmission stream" are placed. Yonemitsu's error correcting circuit 216 performs "error detection and correction computations on the data and error correction symbols" and, in returning corrected symbols to the ring buffer 217, Yonemitsu's error correcting circuit 216 performs "placing the corrected data symbols on a receive output buffer in their correct positions" for a subsequent step of "outputting an error corrected data stream."

Regarding claims 13-15, Yonemitsu's ECC symbols are 16 bits each (two bytes, or one word).

Regarding claim 16, Yonemitsu's interleaving depth, as it is an effective interleaving depth, is such that "fixed time intervals" between corresponding data symbol positions of different codewords are "longer than the time intervals of error bursts caused by the noisy channel."

Regarding claim 17, Yonemitsu's system uses a CRC code for error detection after error detection and correction by the ECC codes.

### ***Response to Arguments***

12. Applicant's arguments filed 03 September 2004 have been fully considered but they are not persuasive.

Applicant appears to be referring to another disclosure (possibly that of S.N. 10/091,836?) in assertions made about the clarity of the drawing descriptions.

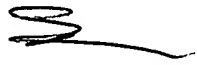


***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. Baker whose telephone number is (703) 305-9681. The examiner can normally be reached on Monday-Friday (11:00 AM - 7:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (703) 305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Stephen M. Baker  
Primary Examiner  
Art Unit 2133

smb